

What is claimed is:

1. A surveying instrument comprising:

a sighting telescope having an objective lens and an eyepiece;

5 an erecting optical system functioning so that an image formed by said objective lens is viewed as an erect image through the eyepiece; and

10 a light shield device, positioned in an optical path extending from an incident surface of said erecting optical system to an exit surface of said erecting optical system, for preventing an off-field light bundle which is incident on said erecting optical system from reaching said eyepiece.

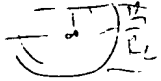
15 2. The surveying instrument according to claim 1, wherein said light shield device comprises a light shield mask fixed to said incident surface of said erecting optical system.

20 3. The surveying instrument according to claim 1, wherein said light shield device comprises a light shield plate fixed to said incident surface of said erecting optical system.

25 4. The surveying instrument according to claim 2, wherein said light shield mask comprises an aperture which allows image forming light to pass therethrough, said aperture being shaped so as to be asymmetrical with

respect to an optical axis incident on said incident surface of said erecting optical system.

5. The surveying instrument according to claim 4, wherein a first length of said aperture from the incident optical axis to a first side, at which an optical path length between said incident surface and a first reflection surface of said erecting optical system is shortest, is shorter than a second length of said aperture from the incident optical axis to a second side at which an optical path length between said incident surface and said first reflection surface is longest.



6. The surveying instrument according to claim 1, wherein said erecting optical system comprises two cemented prisms, and wherein said light shield device comprises a recessed portion formed on a common edge of the cemented surface of the two cemented prisms.

Not on optical path

7. The surveying instrument according to claim 1, wherein said erecting optical system comprises two cemented prisms, and wherein said light shield device comprises a beveled surface formed on a common edge of the cemented surface of the two cemented prisms.

Not on optical path

8. The surveying instrument according to claim 1, wherein said light shield device is formed by an extended portion of said erecting optical system on said incident surface thereof, said extended portion being

Not on optical path

deformed to extend toward said objective lens side so that
said off-field light bundle which is reflected by a first
reflection surface of said erecting optical system is
prevented from being incident on a second reflection
5 surface of said erecting optical system and being allowed
to exit from said erecting optical system via said extended
portion.

Fail
to
limit

9. The surveying instrument according to claim
1, wherein said erecting optical system comprises a
10 semitransparent ⁹⁰ film formed on a first reflection surface
of said erecting optical system, wherein light incident
on said first reflection surface is transmitted through
said semitransparent film to proceed toward a focus
15 detecting ⁵⁰ device which detects a focus state of said
sighting telescope.

Fig. 19

10. The surveying instrument according to claim
1, wherein said erecting optical system comprises a Porro
prism.

11. The surveying instrument according to claim
20 1, wherein said erecting optical system comprises a roof
prism.

12. A surveying instrument comprising:
a sighting telescope having an objective lens and
an eyepiece;

25 a semitransparent film positioned between said

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objective lens and said eyepiece;

a focus detecting device which receives light which is passed through said semitransparent film to detect a focus state of said sighting telescope; and

5 a light shield device, positioned in an optical path extending from said semitransparent film to said focus detecting device, for preventing an off-field light bundle which is incident on said semitransparent film from reaching said focus detecting device.

10 13. The surveying instrument according to claim 12, further comprising an erecting optical system functioning so that an image formed by said objective lens is viewed as an erect image through the eyepiece, said semitransparent film being formed on a reflection surface
15 of said erecting optical system.

14. The surveying instrument according to claim 13, wherein said light shield device comprises a light shield mask fixed to an incident surface of said erecting optical system.

20 15. The surveying instrument according to claim 13, further comprising a beam splitting prism which is provided separately from said erecting optical system and cemented to said semitransparent film, said light shield device being fixed to said beam splitting prism.

25 16. The surveying instrument according to claim

15, wherein said semitransparent film is formed on a first reflection surface of said erecting optical system, said beam splitting prism being cemented to said first reflection surface wherein said semitransparent film being positioned between said beam splitting prism and said first reflection surface.

17. The surveying instrument according to claim 15, wherein said semitransparent film is formed on a second reflection surface of said erecting optical system, said beam splitting prism being cemented to said second reflection surface wherein said semitransparent film being positioned between said beam splitting prism and said second reflection surface.

18. The surveying instrument according to claim 1, further comprising [an erecting optical system functioning so that an image formed by said objective lens is viewed as an erect image through the eyepiece; and

a beam splitting prism provided separately from said erecting optical system;

wherein said semitransparent film is formed on said beam splitting prism.

19. The surveying instrument according to claim 18, wherein said light shield device is fixed to an exit surface of said beam splitting prism.

20. The surveying instrument according to claim

12, wherein said focus detecting device comprises a phase-difference detection focus detecting device.

21. The surveying instrument according to claim 12, wherein said focus detecting device comprises a contrast detecting focus detecting device.

22. The surveying instrument according to claim 12, wherein said erecting optical system comprises a Porro prism.

23. The surveying instrument according to claim 12, wherein said erecting optical system comprises a roof prism.

24. The surveying instrument according to claim 1, wherein said sighting telescope comprises a focus adjustment lens positioned between said objective lens and said erecting optical system.

25. The surveying instrument according to claim 12, wherein said sighting telescope comprises a focus adjustment lens positioned between said objective lens and said erecting optical system.

26. The surveying instrument according to claim 15, wherein said beam splitting prism comprises a right-angle prism.

27. The surveying instrument according to claim 18, wherein said beam splitting prism comprises a right-angle prism.

28. The surveying instrument according to claim
10, wherein said Porro prism comprises three right angle
prisms.

29. The surveying instrument according to claim
5 22, wherein said Porro prism comprises three right angle
prisms.

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